Longitudinal interactive vascular exposure and Alzheimers Disease

https://neurodegenerationresearch.eu/survey/longitudinal-interactive-vascular-exposure-and-alzheimers-disease/

Principal Investigators

GAO, SUJUAN

Institution

INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS

Contact information of lead PI
Country

USA

Title of project or programme

Longitudinal interactive vascular exposure and Alzheimers Disease

Source of funding information

NIH (NIA)

Total sum awarded (Euro)

€ 848,320.18

Start date of award

01/07/2014

Total duration of award in years

3

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Acquired Cognitive Impairment... Aging... Alzheimer's Disease... Alzheimer's Disease Related Dementias (ADRD)... Alzheimer's Disease including Alzheimer's Disease Related Dementias (AD/ADRD)... Brain Disorders... Cerebrovascular... Dementia... Minority Health for IC Use... Neurodegenerative... Neurosciences... Prevention... Translational Research... Vascular Cognitive Impairment/Dementia

Research Abstract

DESCRIPTION (provided by applicant): A number of vascular diseases and vascular risk factors including diabetes, hypertension, hyperlipidemia, smoking, and obesity have been implicated but not consistently established as risk factors for Alzheimer’s disease (AD). In addition, studies using a combination of these risk factors to predict AD risk have reported only modest accuracy. Current predictive models for AD have typically characterized risk exposure by assessing vascular markers at a single point in time at the baseline. Such characterization fails to capture potential changes or variability over the relatively long latency period prior to he onset of AD symptoms. These static predictive models also ignore the vast heterogeneity in individuals’ longitudinal vascular markers over time. We propose a secondary data analysis developing dynamic models using longitudinally collected vascular markers to predict AD risk. We will merge electronic medical records of participants enrolled in the Indianapolis cohort of the longitudinal community-based Indianapolis-Ibadan Dementia Project (IIDP) with research data collected in the IIDP. The IIDP has enrolled a total of 4,105 African Americans aged 65 or older and followed the participants for up to 19 years with cognitive evaluation, clinical diagnosi and risk factor information at regularly scheduled intervals every 2 to 3 years. Our analyses will focus on longitudinally measured vascular markers including blood pressure, lipids, hemoglobin A1C and fasting glucose levels obtained from electronic medical records for the risk of AD. In Aim 1, we will compare longitudinal vascular risk factor profiles between participants with AD and those with normal cognition and determine whether differences in longitudinal vascular profiles are accounted for by differences in medication use. In Aim 2, we will develop a dynamic risk assessment algorithm for AD using longitudinal vascular markers and compare the performance of this new algorithm with existing AD assessment risk scores. In Aim 3 we will identify longitudinal vascular characteristics associated with conversion to dementia in participants with mild cognitive impairment (MCI). In Aim 4, we will examine the association between longitudinal vascular marker trajectories and longitudinal cognitive function using functional regression models to determine how changes in the vascular markers are related to changes in cognitive function.

Lay Summary

PUBLIC HEALTH RELEVANCE: The proposed project will be the first study to explore a dynamic relationship between multiple longitudinal vascular measures and AD in an African American cohort. Results from this study can provide a more accurate AD risk assessment method based on data already routinely collected in clinical practices. Our results may also lead to better strategies for potential interventions in elderly individuals.

Further information available at:

Types:
Investments > €500k

Member States:
United States of America

Diseases:
Alzheimer's disease & other dementias

Years:
2016

Database Categories:

N/A

Database Tags:
N/A